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10/720,344

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Alison J. McMillan

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Manelii Denison & Selter PLLC

2000 M Street

7th Floor

Washington DC, DC 20036

EXAMINER

LIEW, ALEX KOK SOON

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/720,344	Applicant(s) MCMILLAN ET AL.	
	Examiner ALEX LIEW	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-36 is/are allowed.
- 6) ☒ Claim(s) 1-32 and 37-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The amendments filed on 10/23/09 is entered and made of record.

2. **Response to Applicant's Arguments**

I. On page 10 of the reply, the applicant stated:

"The claimed invention recites that "the compressed analyzed data set has high fidelity in regions of interest and has lower fidelity in regions of lesser interest" and

"automatically selecting a variable from the data set such that a high rate of change of the variable indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest." Thus, the compression is automatically adjusted between high fidelity and low fidelity based on the rate of change of the variable, not the variable itself. This is a major distinction between the claimed invention Go."

The independent claims do not recite "automatically adjusted between high fidelity and low fidelity based on the rate of change of the variable, not the variable itself," or any language which suggest the scope of such limitation. If applicant intended for this scope of the limitation, the examiner suggest amending the claims to include "automatically adjusted between high fidelity and low fidelity based on the rate of change of the variable, not the variable itself."

II. On page 11 of the reply, the applicant stated:

"However, under both encoding schemes nothing suggests the compressed analyzed data set has high fidelity in regions of interest and has lower fidelity in regions of lesser interest. As defined by Webster's Dictionary, fidelity is the degree to which an electronic device accurately reproduces its effect. In Go, the compressed analyzed data set, under

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both encoding schemes, has no variation in fidelity because the high-frequency and low-frequency components undergo the same amount of compression. Thus, Go does not provide a compressed data set having high fidelity in regions of interest and lower fidelity in regions of lesser interest as recited in claims 1,9 and 17. For this reason alone, the Section 102 rejection should be withdrawn.”

The examiner agrees on the definition of the term “fidelity,” but such definition must be defined in the specification. However, the reference cited, Go does disclose “... analyzed data set such that the compressed analyzed data set has high fidelity in regions of interest and has lower fidelity in regions of lesser interest wherein the computer system ...” because the inverse wavelet transform is known to reproduce the original data in one or two dimension (figure 13 of Go). The high fidelity regions are regions of locations of the edges (edges defines the meets and boundaries of an object in an image) and the low fidelity regions are simply the background of an image. The edges plays a more important role is reproducing an image, because the object in the image is defined by the edges.

III. On page 12 of the reply, the applicant stated:

“However, even if Go's edge detector were to indicate regions of interest, and they do not, the edge and main image are not compressed with high and low fidelity respectively. Indeed, nothing in Go suggests the compression of the edges and main image is automatically adjusted between high fidelity and low fidelity based respectively based on the rate of change of the variable. In view of the differences between the

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claimed invention and Go, withdrawal of the Section 102 rejection is respectfully requested.”

The examiner does not agree. There is no recitation in the claimed invention which discloses “automatically adjusted between high fidelity and low fidelity based respectively based on the rate of change of the variable.” The examiner suggests amending the claimed invention to recite such feature.

3. Allowable Subject Matter

Claims 33-36 are allowable.

With regards to claim 33, the examiner cannot find any applicable prior art which provides motivation to combine limitation: automatically presenting the most significant cross-sectional views of the geometry on the graphical display, the automatic presentation of the most significant cross-sectional views of the geometry comprising automatically selecting regions which have at least one of a stress, a deformation rate or other variable above a threshold in combination with the rest of the limitations of claim 33.

With regards to claims 34-36 see the rationale for claim 33.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7, 9-11, 15, 17-19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Go (US pat no 5,949,910).

With regards to claim 1, Go discloses a computer system programmed to process a large data set (an image contains large amount of pixel data) includes means for analyzing the data set and means for applying a data compression technique to the analyzed data set such that the compressed analyzed data set (see column 2, lines 43-48) has high fidelity in regions of interest and has lower fidelity in regions of lesser interest (column 1, lines 47-60, an image inherently contains high and low frequency components) wherein the computer system also comprises means to automatically select a variable from the data set such that a high rate of change of the variable indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest (column 7, lines 5-14, Xc is the selected variable, a high pass/sharpening filter is applied to the pixel Xc, to detect whether Xc is an edge pixel or a non-edge pixel, if it is an edge pixel it has a high rate of change between current pixel

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and its neighbor pixel, if is not an edge pixel then the rate of change between the current pixel and its neighboring pixel is low).

With regards to claim 2, Go discloses the data compression technique comprises the use of a wavelet compression technique (column 2, lines 65-67).

With regards to claim 3, Go discloses the data compression technique produces high fidelity in geometric regions of interest at points in time of interest (see column 1, lines 47-60, the high fidelity areas are the high frequency components).

With regards to claim 7, Go discloses means for analyzing the data set comprises a means for finite element analysis (an image contains a finite number of pixels, the analysis performed on the image is finite in terms of the using finite amount of data).

With regards to claims 9 and 17, see the rationale and rejection for claim 1.

With regards to claim 10 and 18, see the rationale and rejection for claim 2.

With regards to claims 11 and 19, see the rationale and rejection for claim 3.

With regards to claims 15 and 23, see the rationale and rejection for claim 7.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 4, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Tsap (US pub no 2001/0040997).

With regards to claim 4, Go discloses all the limitations of claim 1, but do not disclose a geometric region has a rapid change in the stress field. Tsap discloses a geometric region has a rapid change in the stress field (see figure 6, area 602 maybe stretch to a degree where stress will occur). One skilled in the art would include stress field and deformation parameters because to examine the material properties of a non-rigid object, to improve quality control of manufacturing object.

With regards to claims 12 and 20, see the rationale and rejection for claim 4.

2. Claim 8, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Atsumi (US pat no 6,801,665).

With regards to claim 24, Go discloses all the limitations of claim 1, but do not disclose, but does not disclose a local work station and a graphical display is produced at the

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local workstation. Atsumi discloses a local work station and a graphical display is produced at the local workstation (see figure 18, element 812 is a local work station display). One skilled in the art would include a local work station because to allow user to enter and modify parameters to view results, allowing a trial by error method.

With regards to claim 8 and 16, see the rationale and rejection for claim 24.

3. Claim 25-27, 29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall (US pat no 5,991,515).

With regards to claim 25, see the rationale for claim 1. In addition, Go does not disclose producing a graphical display of at least one view of the geometry. Fall discloses producing a graphical display of at least one view of the geometry (figure 4d). One skilled in the art would include such feature because to show user whether image is acceptable after compression.

With regards to claim 26 see the rationale for claim 2.

With regards to claim 27 see the rationale for claim 3.

With regards to claim 29, Fall discloses a local work station (see figure 1, 12).

With regards to claim 32, see the rationale for claim 7.

4. Claims 5, 13 and 21 are rejected U.S.C. 103(a) as being unpatentable over Go '910 as applied to claim 1 further in view of Ransford (US pat no 5,490,221).

With regards to claim 5, Go discloses all the limitations discussed in claim 1, but does not disclose analyzing data set which are 4D as described on page 1 of the specification lines 12 – 15. Ransford discloses analyzing data set, which are 4D data set (see figure 2, elements 20 and 22). One skilled in the ordinary art would include analyzing data set, which are 4D because to obtain greater details of the region of interest by including three dimensional data, to improve recognition of the region of interest in the image.

With regards to claims 13 and 21, see the rationale and rejection for claim 5.

5. Claim 30 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Ransford (US pat no 5,490,221).

With regards to claim 30 see the rationale for claim 5.

6. Claims 6, 14 and 22 are rejected U.S.C. 103(a) as being unpatentable over Go '910 as applied to claim 1 further in view of Board (US pat no 6,499,350).

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With regards to claim 6, Go discloses all the limitations discussed in claim 1, but do not disclose analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use. Board discloses analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use (see column 3, lines 50 to 56) for detecting defects because to find the shape and size of these regions to find the best compression ratio to compress the data where no desired data allowing the user to store more compressed data.

With regards to claims 14 and 22, see the rationale and rejection for claim 6.

7. Claim 31 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Board (US pat no 6,499,350).

With regards to claim 31 see the rationale for claim 6.

8. Claim 28 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Tsap (US pub no 2001/0040997).

With regards to claim 28, see the rationale for claim 4.

9. Claim 37, 39 and 42 are rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Shimoda (US pub no 2001/0016061).

With regards to claim 37, see the rationale for claim 1. Go does not disclose a server, a workstation and a display connected to the workstation; and wherein the workstation is configured to graphically display the compressed analyzed data set on the display so that the regions of lesser interest are viewed at a reduced resolution compared to the resolution in the regions of interest.

Shimoda discloses a server, a workstation and a display connected to the workstation (see figure 1, 103 is the server, 109 is the display device and 100 is the workstation); and wherein the workstation is configured to graphically display device and the analyzed data set is displayed on the display so that the regions of lesser interest are viewed at a reduced resolution compared to the resolution in the regions of interest (see figure 5 shows low resolution of the defect map and figure 7 shows detailed high resolution of the individual defects). One skilled in the art would include such feature because to increase analysis speed and object recognition accuracy.

With regards to claim 39, see the rationale for claim 2.

With regards to claim 42, see the rationale for claim 7.

10. Claim 38 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Shimoda '061 as applied to claim 37 further in view of Tsap '997.

With regards to claim 38, see the rationale for claim 4.

11. Claim 40 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Shimoda '061 as applied to claim 37 further in view of Ransford '221.

With regards to claim 40 see the rationale for claim 5.

12. Claim 41 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Shimoda '061 as applied to claim 37 further in view of Board '350.

With regards to claim 41, see the rationale for claim 6.

Conclusion

This action is made final. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shorten statutory period for reply to this final action is set to expire three months from the mailing date of this action. In the event a first reply is filed within two months of the mailing date of this final action and the advisory action is not mailed until after the end of the three-month shorten statutory period, then the shorten statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory

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action. In no event, however will the statutory period for reply expire later than six months from the mailing date of the final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX LIEW whose telephone number is (571)272-8623 or cell (917)763-1192. The examiner can be reached anytime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

/Alex Liew/
AU2624
11/24/09